

7.20

## **STANDARD OPERATING PROCEDURES FOR DETERMINING ANIMAL FEEDLOT RUNOFF RISK WITH INDEX INSTRUCTIONS AND WORKSHEET**

### **General Information:**

The worksheet can be cleared of all entries except today's date by holding down the "Ctrl" key while pressing the small "c" key. Enter the landowner, location, and planners name in the first three yellow boxes. Today's date is automatically displayed but may be changed if desired. Once changed, the program will no longer display the current date. Then enter the weather station that is closest to the site being evaluated. The precipitation at that site will automatically be entered in the green box below. Enter the hydrologic unit code (HUC) for the location of the lot being evaluated. Note the little red triangles in the corners of some of the cells. Slide the mouse pointer over the top of the cells and additional information or instructions will be displayed.

The spreadsheet allows two feedlots to be evaluated. A before and after project evaluation should be made. Enter a general description of the lot being evaluated. Then enter the size of the lot in square feet and the type of surface on the lot. Next enter the type of animal in the lot, average weight of the animals, and the number of days the animals are confined. If more than one animal type is confined list the type of animal that makes up the majority of the animals. Information about the number of square feet per animal will be automatically calculated. Click on the gray tab titled, "Space Requirements" for recommendations on the desired number of square feet per animal.

### **Feedlot Features, and Index and Risk Level**

Using the point values obtained from Table 1, Feedlot Features, or the information in the red triangles, enter the number of points for each given feature (Containment, Distance, etc.). The computer will automatically calculate the index points and risk level for the described conditions. The spreadsheet must be used to document both the before and after project conditions for each feedlot evaluated.

### **Manure Management and Conservation Practices**

Enter the frequency of hauling or scraping. The frequency of scraping should be entered only if all manure is scraped into a bunker or other structure where the manure will be contained during a 25-year, 24-hour storm. Lastly, enter the conservation practices that will be installed on the lot. A list of potential practices is given at the bottom of the worksheet page.

## **Loading Calculations**

The computer will automatically calculate loading values. The total tonnage of manure is calculated first, followed by amounts of nitrogen (N), phosphorus (P), and Biological Oxygen Demand (BOD) after typical storage loss is calculated. N, P, and BOD availability is also reduced based on the frequency of hauling or scraping. Total loading values are determined by multiplying the amount of the nutrient available by the listed precipitation, lot, and risk factors. Generally the greater the precipitation: the higher the factor. Also, harder lot cover leads to greater likelihood of runoff and a higher risk factor. The higher the risk factor entered in the feedlot features results in higher factors.

### **Interpretation:**

An interpretation table (vulnerability table) can be found by clicking on the tab at the bottom of the screen labeled "Interpretation". This table explains the ratings displayed in the row labeled "risk level". To obtain additional information or help on the use of the Utah Animal Feedlot Runoff Risk Index (UAFRRI) contact the nearest NRCS Area Agronomist or Kerry Goodrich at (801) 524-4568.

# **\*North Dakota Animal Feedlot Runoff Risk Index Worksheet**

<b>Landowner:</b>		<b>Weather Station:</b>	
<b>Location:</b>		<b>HUC:</b>	
<b>Planner:</b>		<b>Precipitation:</b>	
<b>Date:</b>			

<b>Lot Description:</b>				
<b>Planning Scenario:</b>	<b>Before</b>	<b>After</b>	<b>Before</b>	<b>After</b>
<b>Lot Size (Sq. Ft.):</b>				
<b>Surface Type:</b>				
<b>Animal Type:</b>				
<b>No. of Animals:</b>				
<b>Avg. Weight:</b>				
<b>Days Confined:</b>				
<b>Sq. Ft./Animal:</b>				
<b>Feedlot Features</b>				
<b>Runoff Containment</b>				
<b>Distance to Water</b>				
<b>% Slope</b>				
<b>Vegetation</b>				
<b>Clean H<sub>2</sub>O Diversion</b>				
<b>Index and Risk Level</b>				
<b>Index:</b>				
<b>Risk Level:</b>				
<b>Manure Management and Conservation Practices</b>				
<b>Haul/Scrape Frequency</b>				
<b>Practices to be implemented</b>				
<b>Loading Calculations</b>				
<b>Fresh Manure (tons)</b>				
<b>Total N Available (lbs)</b>				
<b>Total P Available (lbs)</b>				
<b>Total BOD Available (lbs)</b>				
<b>Precipitation Factor</b>				
<b>Lot Surface Factor</b>				
<b>Risk Factor</b>				
<b>Total N Loading (lbs)</b>				
<b>Total P Loading (lbs)</b>				
<b>Total BOD Loading (lbs)</b>				

\*Modified from Utah to fit North Dakota. Individual high risk features should be evaluated and conservation practices applied where possible. All runoff from a 25-year, 24-hour storm event must be contained on the lot.

**Practices that might be implemented:**

- Build Storage
- Change Hauling Frequency
- Move Lot
- Increase Sq. Ft./Animal
- Increase Storage
- Install Dike
- Install Diversion
- Install Filter Strip
- Regrade Lot
- Roof Runoff System